

## CLAIMS

1. A resource management system, comprising:  
a resource characteristic database; and  
5 in the resource characteristic database, for each of a plurality of resources,  
means for storing a skill level required for the resource.
2. The resource management system of claim 1, further comprising:  
an enterprise resource database; and  
10 in the enterprise resource database, for each of a plurality of human resources  
in the enterprise, means for storing a skill level of the human resource.
3. The resource management system of claim 2, further comprising:  
in the resource characteristic database, for each of the plurality of resources,  
15 means for storing information about attributes of the resource.
4. The resource management system of claim 1, further comprising:  
in the resource characteristic database, for each of the plurality of resources,  
means for storing information about attributes of the resource.
- 20 5. The resource management system of claim 2, further comprising:  
in the enterprise resource database, for each of a plurality of resources in the  
enterprise, means for storing actual characteristics of the resource.
- 25 6. The resource management system of claim 5, wherein the actual characteristics are  
defined as one of machine inputs or inputs defining what an operators sees, hears,  
smells, tastes or touches.
7. The resource management system of claim 1, further comprising:  
30 in the enterprise resource database, for each of a plurality of resources in the  
enterprise, means for storing actual characteristics of the resource.

8. The resource management system of claim 7, wherein the actual characteristics are defined as one of machine inputs or inputs defining what an operators sees, hears, smells, tastes or touches.

5 9. The resource management system of claim 4, further comprising:  
in the enterprise resource database, for each of a plurality of resources in the enterprise, means for storing actual characteristics of the resource.

10 10. The resource management system of claim 9, wherein the actual characteristics are defined as one of machine inputs or inputs defining what an operators sees, hears, smells, tastes or touches.

11. A resource management system, comprising:  
an enterprise resource database; and  
15 in the enterprise resource database, for each of a plurality of resources in the enterprise, means for storing actual characteristics of the resource, wherein the actual characteristics are defined as one of machine inputs or inputs defining what an operators sees, hears, smells, tastes or touches.

20 12. The resource management system of claim 11, further comprising:  
a resource characteristic database; and  
in the resource characteristic database, for each of the plurality of resources, means for storing information about attributes of the resource.

25 13. A resource management system, comprising:  
an enterprise resource database for storing information about resources being used in an enterprise;  
a deficiency database for storing information regarding interactions among resources and known deficiencies related to the resources and the interactions among  
30 the resources; and  
means for identifying from the database deficiencies related to the resources being used in the enterprise.

14. The resource management system of claim 13, further comprising:

means for receiving an indication of estimated life of a resource being used in an enterprise;

5 wherein the deficiency database includes, for each deficiency of each resource, a cost impact of the deficiency;

an efficiency analyzer that uses the cost impact of the deficiency from the deficiency database and estimated life of the resource and determines whether the use of the resource meets defined constraints.

10 15. The resource management system of claim 14, further comprising:

an enterprise performance database including information about entities and predictions, decisions and actions made by the entities; and

15 an accountability assignor that, given an indication of a deficiency, identifies, using the enterprise performance database, one of the entities that made a prediction, decision or action that resulted in the deficiency.

16. The resource management system of claim 14, wherein the deficiency database includes for each resource a specification of a life associated with each of one or more deficiencies related to the resource, and further comprising:

20 a resource life estimator that, given an indication of a deficiency related to a resource, identifies a life for the resource associated with the deficiency from the deficiency database.

25 17. The resource management system of claim 16, wherein the deficiency database includes for each resource a specification of one or more failure modes associated with each of one or more deficiencies related to the resource, and further comprising:

30 a failure mode predictor that, given an indication of a deficiency related to a resource, identifies a failure mode associated with the deficiency from the deficiency database

18. The resource management system of claim 17, wherein the deficiency database includes, for each resource, display information about a failure mode corresponding to the deficiency, and further comprising:

5 means for prompting a user for selection, using the display information from the deficiency database, to identify a failure mode of the resource in response to a failure of the resource.

10 19. The resource management system of claim 18, wherein the deficiency database that stores an indication of a failure mode corresponding to a deficiency for each resource, and further comprising:

means for receiving an indication of a failure mode of a resource; and  
a deficiency identifier that identifies one or more deficiencies in the resource related to the indicated failure mode using the deficiency database.

15 20. The resource management system of claim 19, wherein the deficiency database stores information about one or more corrective actions associated with each deficiency of each resource, and further comprising:

20 means for receiving an indication of a deficiency of a resource; and  
means for accessing the corrective action associated with the deficiency of the resource from the deficiency database.

21. The resource management system of claim 20, further comprising:

25 an enterprise performance database including information about entities and predictions, decisions and actions made by the entities; and  
an accountability assignor that, given an indication of a deficiency, identifies, using the enterprise performance database, one of the entities that made a prediction, decision or action that resulted in the deficiency.

22. The resource management system of claim 21, further comprising:

30 a life cycle cost analyzer for computing a life cycle cost corresponding to the deficiency identified.

23. The resource management system of claim 22, further comprising:  
a database for storing competitive pricing information about the resource and  
for storing information regarding cost structure of a purchaser of a resource; and  
means for identifying from the database a price for the resource using the  
5 stored cost information and stored pricing information.

24. The resource management system of claim 22, further comprising:  
a pricing analyzer having an input for receiving information describing a  
desired resource, and for accessing the enterprise resource database to retrieve  
10 information about suppliers for the resource, and having an output for providing an  
indication of a price and supplier for the resource.

25. The resource management system of claim 14, wherein the deficiency database  
that stores an indication of a failure mode corresponding to a deficiency for each  
15 resource, and further comprising:  
means for receiving an indication of a failure mode of a resource; and  
a deficiency identifier that identifies one or more deficiencies in the resource  
related to the indicated failure mode using the deficiency database.

26. The resource management system of claim 25, wherein the deficiency database  
stores information about one or more corrective actions associated with each  
deficiency of each resource, and further comprising:  
means for receiving an indication of a deficiency of a resource; and  
means for accessing the corrective action associated with the deficiency of the  
25 resource from the deficiency database.

27. The resource management system of claim 26, further comprising:  
an enterprise performance database including information about entities and  
predictions, decisions and actions made by the entities; and  
30 an accountability assignor that, given an indication of a deficiency, identifies,  
using the enterprise performance database, one of the entities that made a prediction,  
decision or action that resulted in the deficiency.

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28. The resource management system of claim 17, further comprising:  
a life cycle cost analyzer for computing a life cycle cost corresponding to the deficiency identified.

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29. The resource management system of claim 13, wherein the deficiency database stores an indication of a failure mode corresponding to a deficiency for each resource, and further comprising:

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means for receiving an indication of a failure mode of a resource; and  
a deficiency identifier that identifies one or more deficiencies in the resource related to the indicated failure mode using the deficiency database.

30. The resource management system of any of claims 13 through 29, further comprising generating results according to specified constraints of an enterprise.

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31. The resource management system of any of claims 13 through 29, further comprising automatically changing results according to changes in the enterprise resources.

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32. The resource management system of claim 30, further comprising automatically changing results according to changes in the specified constraints of the enterprise.

33. A resource management system, comprising;

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a deficiency database for storing information regarding interactions among resources and known deficiencies related to the interactions;  
means for receiving a specification of resources being used in an enterprise;  
means for identifying from the database deficiencies related to the specified resources.

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34. A resource management system, comprising:

means for receiving an indication of a failure mode of a resource;  
a deficiency database that stores an indication of a deficiency associated with a

failure mode for each of a plurality of resources; and

a deficiency identifier that identifies one or more deficiencies in the resource related to the indicated failure mode using the deficiency database.

5 35. The resource management system of claim 34, wherein the failure mode is an estimated failure mode.

36. The resource management system of claim 34, wherein the failure mode is an actual cause of failure.

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37. The resource management system of claim 34, wherein the resource is an operating resource.

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38. The resource management system of claim 34, wherein the resource is a human resource.

39. The resource management system of claim 34, wherein the resource is a manufacturing resource.

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40. The resource management system of claim 34, wherein the deficiency database includes for each resource a specification of a life associated with each of one or more deficiencies related to the resource, and further comprising:

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a resource life estimator that, given an indication of a deficiency related to a resource, identifies a life for the resource associated with the deficiency from the deficiency database.

41. The resource management system of claim 40, further comprising:

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a life cycle cost analyzer for computing a life cycle cost corresponding to the deficiency identified.

42. The resource management system of claim 34, wherein the deficiency database includes, for each deficiency of each resource, a cost impact of the deficiency, and

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further comprising:

means for receiving an indication of estimated life of a resource being used in an enterprise;

an efficiency analyzer that uses the cost impact of the deficiency from the deficiency database and estimated life of the resource and determines whether the use of the resource meets defined constraints.

43. The resource management system of claim 42, wherein the deficiency database includes for each of a plurality of resources a specification of a life associated with each of one or more deficiencies related to the resource; and

a resource life estimator that, given an indication of a deficiency related to a resource, identifies a life for the resource associated with the deficiency from the deficiency database.

44. The resource management system of claim 43, further comprising:

a life cycle cost analyzer for computing a life cycle cost corresponding to the deficiency identified.

45. A resource management system, comprising:

a deficiency database for storing information about a plurality of resources, including information about one or more corrective actions associated with each deficiency of each of the plurality of resources;

means for receiving an indication of a deficiency of a resource; and

means for accessing the corrective action associated with the deficiency of the resource from the deficiency database.

46. A resource management system comprising:

an enterprise performance database including information about entities and predictions, decisions and actions made by the entities; and

an accountability assignor that, given an indication of a deficiency, identifies, using the enterprise performance database, one of the entities that made a prediction, decision or action that resulted in the deficiency.



47. A resource management system comprising:

means for receiving an indication of estimated life of a resource being used in an enterprise;

5 a deficiency database including, for each deficiency of each resource, a cost impact of the deficiency;

an efficiency analyzer that uses the cost impact of the deficiency from the deficiency database and estimated life of the resource and determines whether the use of the resource meets defined constraints.

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48. The resource management system of claim 47, further comprising:

an enterprise performance database including information about entities and predictions, decisions and actions made by the entities; and

15 an accountability assignor that, given an indication of a deficiency, identifies, using the enterprise performance database, one of the entities that made a prediction, decision or action that resulted in the deficiency.

49. A resource management system, comprising:

20 a deficiency database including for each of a plurality of resources a specification of one or more failure modes associated with each of one or more deficiencies related to the resource; and

a failure mode predictor that, given an indication of a deficiency related to a resource, identifies a failure mode associated with the deficiency from the deficiency database.

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50. A resource management system, comprising:

a deficiency database including for each of a plurality of resources a specification of a life associated with each of one or more deficiencies related to the resource; and

30 a resource life estimator that, given an indication of a deficiency related to a resource, identifies a life for the resource associated with the deficiency from the deficiency database.

51. The resource management system of claim 50, further comprising:

a failure mode predictor that, given an indication of a deficiency related to a resource, identifies a failure mode associated with the deficiency from the deficiency database.

52. A resource management system, comprising:

a deficiency database including, for each of a plurality of resources, information for each resource about one or more deficiencies and corresponding display information about a failure mode corresponding to the deficiency;

means for prompting a user for selection, using the display information from the deficiency database, to identify a failure mode of the resource in response to a failure of the resource.

53. The resource management system of claim 52, further comprising:

a database for storing information describing a predicted life and a predicted failure mode of a resource; and

means for comparing an actual failure mode and actual life of a resource to the predicted life and predicted failure mode of the resource.

54. The resource management system of claim 52, wherein the deficiency database stores an indication of a deficiency associated with a failure mode for each of a plurality of resources, and further comprising:

means for receiving an indication of a failure mode of a resource;

a deficiency identifier that identifies one or more deficiencies in the resource related to the indicated failure mode using the deficiency database.

55. The resource management system of claim 54, wherein the deficiency database stores information about one or more corrective actions associated with each deficiency of each resource;

means for receiving an indication of a deficiency of a resource; and

means for accessing the corrective action associated with the deficiency of the

resource from the deficiency database.

56. The resource management system of claim 55, further comprising:

an enterprise performance database including information about entities and  
5 predictions, decisions and actions made by the entities; and

an accountability assignor that, given an indication of a deficiency, identifies,  
using the enterprise performance database, one of the entities that made a prediction,  
decision or action that resulted in the deficiency.

10 57. The resource management system of claim 56, further comprising:

a life cycle cost analyzer for computing a life cycle cost corresponding to the  
deficiency identified.

58. A resource management system comprising:

15 an enterprise resource database storing information describing resources in an  
enterprise;

an input for receiving a description of goals and objectives; and

means for determining an ideal combination of resources for meeting the  
described goals and objectives using the enterprise resource database.

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59. A resource management system comprising:

an enterprise resource database;

a pricing analyzer having an input for receiving information describing a  
desired resource, and for accessing the enterprise resource database to retrieve

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information about suppliers for the resource, and having an output for providing an  
indication of a price and supplier for the resource.

60. A system for providing customized engineered products, comprising:

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means for receiving an indication of resources with which the engineered  
product is to interact;

means for specifying the engineering product to be compatible with the  
identified resources; and

means for manufacturing the engineered product as specified.

61. A system for providing specific installation and operating instructions for an engineered product, comprising:

5 a database for storing a specific installation and operating instruction variant for each variant of the engineered product;

means for receiving a specification for the engineered product; and

means for accessing the database to retrieve the specific installation and operating instruction for the specified engineered product.

10 62. The system of claim 61, wherein the database further includes a corrective action associated with a deficiency in the specification of the engineered product, and wherein the installation and operating instructions for the specified engineered product includes the corrective action.

15 63. A system for managing resources, comprising:

a database for storing information describing deficiencies of a supplier of resources;

means for receiving an indication of a desired resource; and

20 means for determining from the database the ability of the supplier to provide the desired resource according to the described deficiencies.

64. A system for managing sales of a resource, comprising:

25 a database for storing competitive pricing information about the resource and for storing information regarding cost structure of a purchaser of a resource; and

means for identifying from the database a price for the resource using the stored cost information and stored pricing information.

65. An information service system, comprising:

30 a resource characteristic database for storing information describing one or more attributes of a plurality of resources;

an actual resource database for storing information about resources in use in

one or more enterprises;

a performance database for storing information about performance of the resources in use;

5 a deficiency database for storing information describing one or more deficiencies of the plurality of resources in the resource characteristic database; means for enabling multiple entities to access the databases.

10 66. The information service system of claim 65, wherein the deficiency database includes, for each resource, display information about a failure mode corresponding to the deficiency, and further comprising:

means for prompting a user from one of the multiple entities for selection, using the display information from the deficiency database, to identify a failure mode of the resource in response to a failure of the resource.

15 67. The information service system of claim 66, wherein the deficiency database that stores an indication of a failure mode corresponding to a deficiency for each resource, and further comprising:

20 means for receiving an indication of a failure mode of a resource; and a deficiency identifier that identifies one or more deficiencies in the resource related to the indicated failure mode using the deficiency database.

25 68. The information service system of claim 67, wherein the deficiency database stores information about one or more corrective actions associated with each deficiency of each resource, and further comprising:

means for receiving an indication of a deficiency of a resource; and means for accessing the corrective action associated with the deficiency of the resource from the deficiency database.

30 69. The information service system of claim 68, further comprising:

an enterprise performance database including information about entities and predictions, decisions and actions made by the entities; and an accountability assignor that, given an indication of a deficiency, identifies,

using the enterprise performance database, one of the entities that made a prediction, decision or action that resulted in the deficiency.

70. The resource management system of claim 69, further comprising:

5 a life cycle cost analyzer for computing a life cycle cost corresponding to the deficiency identified.

71. A resource management system, comprising:

10 a database for storing information describing each of a plurality of resources, and information describing deficiencies in each of the resources and deficiencies arising from interactions among the plurality of resources;

means for allowing selection of a combination of resources; and

15 means for indicating deficiencies in the selected combination of resources and suggestion changes in resources to remove one or more deficiencies.

72. The resource management system of claim 71, further comprising:

20 a compatibility analyzer coupled to the resource characteristic database, the compatibility analyzer having an input that receives the data indicative of a characteristic of a first resource for comparison of a characteristic of a second resource, to determine a modification which, when made to one of the first resource and the second, allows the first resource to be compatible with the second resource.

73. The resource management system of claim 71, further comprising:

25 means for providing from the resource characteristic database data indicative of a characteristic of a first resource for comparison of a characteristic of a second resource, and for receiving an indication of a modification which, when made to one of the first resource and the second, allows the first resource to be compatible with the second resource.

30 74. A human resource management system, comprising:

a resource characteristic database including for each resource, a required skill level for the resource;

an enterprise resource database including, for each resource, an associated human resource, and for each human resource, a skill level; and

means for indicating deficiencies in the association of human resources with resources and associated corrective actions.

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75. A purchasing system comprising:

a failure analyzer that presents an individual with possible causes of failure of a resource and associated corrective actions, wherein a corrective action includes a purchase of a resource; and

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means, operative in response to selection of a cause of failure, for initiating a purchase transaction for the resource.

76. A process for building a resource management system, comprising:

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creating a database including a solution defined as a combination of resources and information regarding deficiencies of other resources with respect to the solution, and

during use of the resource management system, adding information about resources being used to the database, including deficiencies of the resources with respect to the solution.

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77. A resource management system, comprising:

a database for storing information describing each of a plurality of resources, and information describing deficiencies in each of the resources and deficiencies arising from interactions among the plurality of resources;

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means for allowing selection of a combination of resources; and

means for identifying deficiencies in predictions, decisions and/or actions related to the selected combination of resources.

78. A resource management system, comprising:

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a failure analyzer that presents an individual with possible causes of failure of a resource and associated corrective actions, wherein a corrective action includes an action related to the resource; and

means, operative in response to selection of a cause of failure, for initiating the action related to the resource.

5 79. The resource management system of claim 78, wherein the action comprises defining a specification of a product.

80. The resource management system of claim 78, wherein the action comprises generation of engineered installation and operating instructions.

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